

Carbonation shelf life

how CO₂ Sustain can help

Plastic is porous meaning that CO₂ leakage over time is inevitable, and this problem is compounded with bottle lightweighting. However, shelf life can be extended, claims CO₂ Sustain.

CO₂ Sustain is a business that is all about making time and cost efficiencies to both manufacturers and brands within the beverages industry. Our patented formula is proven to significantly improve carbonation shelf life through our innovative bubble technology – but what does this have to do with you?

Porous plastic

Simply put, plastic is porous meaning that gas leakage over time is inevitable, capping carbonation shelf life for PET-packaged drinks at 12 months as a guideline; or at least until recently, that is. If you are a bottling manufacturer or work with one as a business in beverages, then you'll know that plastic pollution is an international concern that affects us all, as producers and consumers.

This has triggered mounting pressure on manufacturers to reduce plastic usage and reduce their environmental impact. Having said this, adhering to firmer restrictions mean that bottlers benefit from a substantial cost saving by using less increasingly expensive raw materials, so in all likelihood this trend isn't likely going anywhere.

There is a downside to this move however, as the thinner the plastic bottle, the more porous it becomes and the quicker your carbonated beverage will lose its fizzy potency. This problem is made even worse when producing and distributing in hot climates, where refreshing drinks are



in the highest demand, as the elevated temperatures exacerbate CO₂ loss. In other words, despite saving money and resources in one area by reducing plastic usage, you are then in danger of facing new hurdles with carbonation shelf life cut shorter and wastage likely to increase.

Microbubbles

If you were to use CO₂ Sustain as part of the manufacturing process for your carbonated soft drinks lines, shelf life is preserved for far longer, offsetting the risk associated with the use of thinner plastic bottles. Aside from being an excellent foam control agent, our carbonation stabiliser works by effectively wrapping itself around CO₂ bubbles within carbonated soft drinks before they have the chance to dispropor-



tionate, where they merge with others to form larger bubbles resulting in a loss of pressure; accelerating the rate in which gas is released into the atmosphere.

With CO₂ Sustain, microbubbles retain their size meaning that gas release is much better controlled. One of our South African customers noticed a four-week difference in shelf life between their product with our solution versus without – during the testing phase, they found that their drink normally lasted about 12 weeks, but with our help fizziness was maintained for 16 weeks.

No sugar, no problem? Well, not exactly

Reduced sugar content is becoming more and more important to consumers, and we're sure that by now, you're well aware of the benefits of stevia as a natural sugar substitute in carbonated soft drinks.

You might be considering reformulation; or may have already started to reformulate your product range to introduce natural 'low' and 'no-calorie' products. This is a smart move – not only does this give your brand options for avoiding sugar taxes, but it encourages a healthier lifestyle for your consumers too.

However, despite the obvious consumer and business benefits of reformulating with stevia, using it presents a much less publicised yet major problem for carbonated soft drinks producers: Excess foaming during filling.

This happens because stevia has very limited solubility in water, which is a big issue given that many carbonated drinks are more than 80 percent water. When carbonating the beverage during the bottling process, excess foam is created, making it very difficult to fill into the packaging.

The result? More waste, slower line speeds, less productivity.

Sustain® 5002 has been specifically developed to combat this problem – helping brands to easily produce drinks with sugar substitutes – which would usually cause the drink to foam more during the bottling process. Line speeds remain fast and product quality is maintained.



Grounded in science

One of our crowning accomplishments so far, as a business grounded in science, began with a conversation with one of our long-term customers and ended with them telling us that we were transforming the way in which people think about carbonation, with the potential to change the game entirely.

As part of our role in driving innovative efficiencies for the beverages industry, we have been able to debunk some key misconceptions and in our own way contribute to our customer's product development and manufacture in a positive way. For example, adding more carbon dioxide to your liquid solution won't make the drink fizzier because regardless of how much gas is pumped in, water can only retain a very small percentage in liquid form (as carbonic acid) and so the rest is bound to rapidly escape one way or another.

In case you were wondering how exactly we measure carbonation shelf life, most of the testing takes place organoleptically, or in other words by tasting products. So luckily (or unluckily) for those doing the testing, a lot of samples are tasted that have been subject to a variety of conditions, including at different temperatures and pH's, over a set time period.

The results from these tests can offer your business projections indicating the extent to which carbonation deterioration can be managed with CO₂ Sustain compared to not using it and can also provide insight about the level of the value we can then add to your final product.

We're developing more variants of CO₂ Sustain all the time, catering to ever-more niche and specialist beverages, but all of our core products are non-silicone, preservative free processing aids.

Extend your product's lifespan and let the fizzicists at CO₂ Sustain take the fuss out carbonated beverage manufacture. ■

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